X-Net install with DireWolf by Jeff KP3FT

A basic X-Net v1.38 for Linux (called "linuxnet") installion on Linux Mint, set up to use Direwolf as a KISS TNC. My setup sends out a beacon every 30 minutes, and sends both NETROM and Flexnet node-broadcasts directed to my neighbor Flexnet node NC2C-1. At the end of this file are the steps to update it to version 1.39 which is just a simple download and replacement of a single file, but I found on my system that v1.38 has to be installed and executed first.

I have only done this on Mint, but it will likely work on Ubuntu and other Debian distros. There is a version for Raspberrys, but I haven't done a complete install of that one yet. This is a work-in-progress so no doubt I don't have configurations optimal and probably not even correct... just barely scratching the surface of X-Net and still figuring things out. But this at least gets a very basic but functioning install working enough to communicate with neighboring Flexnet RF nodes using Direwolf as a TNC. Details like auto-running X-Net, a keep-alive script, and running it as non-root are later improvements. Anyone, please feel free to make corrections and updates.

1. Create a folder called xnet or whatever you like, in your /home/USER/ folder. Mine is in /home/kp3ft/

2. Download the linuxnet.zip file into that folder from here: http://xnet.swiss-artg.ch/zip/linuxnet.zip

3. Unzip the file. The unzipped file contains another folder called linuxnet with several files.

4. Move to that new linuxnet folder, find the "linuxnet" executable, and make sure it is indeed executable. If it isn't, right-click the file if using GUI and make it executable. Or in a Terminal, do for example:

```
cd /home/kp3ft/xnet/linuxnet
chmod +x linuxnet
```

5. Next, either rename the existing AUTOEXEC.NET file or move it into a separate folder so that it won't be used. You can keep the file where it is and edit it, but it's easier to just replace with mine into your linuxnet folder from here and edit it for your setup:
https://www.qsl.net/swlkp3/Packet/AUTOEXEC.NET

6. Text-edit that downloaded AUTOEXEC.NET file, and change the "my call KP3FT", "my tcall KP4DOG", and "my alias SNB" to your own. Any lines starting with a "#" in that file are disabled. From what I can tell, "my call" is your actual node call, and "my tcall" is a user-call. (For example, when starting linuxnet in a Terminal, it automatically

starts NODE-broadcasts and my beacon using "my call" (KP3FT). If I tell linuxnet to "c kp3ft" in the same Terminal, I am using the "tcall" KP4DOG and can then connect to other nodes as user KP4DOG.)

7. Next, create a new empty file called IP.NET. (IP.NET and AUTOEXEC.NET must be in upper-case letters)

8. In that IP.NET file, make a line like this and edit accordingly for your system. Mine sends a beacon every 30 minutes on port 1 with my Alias and Node-call.

```
BEACON ADD 1800 1 ID text SNB:KP3FT in South New Berlin, NY XNET 1.39
```

9. Close and save the file.

9. Next, edit your Direwolf's "direwolf.conf" file. (If Direwolf isn't installed yet, install it using this walk-through: https://www.qsl.net/swlkp3/Packet/DWinstall.txt)

Scroll down to the "KISS 8001" line, and change 8001 to 0. This will disable the default KISS port. (Don't add a "#" to the line instead to disable it. Normally, a "#" disables a line, but for whatever reason Direwolf will still keep a KISS port open on port 8001 in that case). Now create a new line called SERIALKISS /dev/ptyp1 19200.

10. Close and save the file.

11. In a Terminal, run:

```
sudo nano /etc/default/grub
```

Change the line from:

```
GRUB_CMDLINE_LINUX=""
```

to:

```
GRUB_CMDLINE_LINUX="pty.legacy_count=10"
```

12. Then run:

```
sudo update-grub
```

13. Reboot the computer. After reboot, linuxnet and Direwolf are now configured to use a virtual COM2 port.

14. Now it's ready to run and test X-Net and Direwolf's RX and TX after the reboot. Direwolf needs to be started first, with root permission. In a Terminal start Direwolf:

```
sudo direwolf -qd
```

15. In another Terminal, cd into your linuxnet folder and start linuxnet, also with root permission:

```
sudo ./linuxnet
```

16. Linuxnet should now be running in the Terminal. Hit the ESC key and type in:

```
c <your my call>   (in my case it's: c kp3ft)
```

17. From there, try connecting to any other callsign, again hitting the ESC key first. Direwolf should now put the radio into transmit attempting connections to that call.

18. If all is well, you can update linuxnet version 1.38 to 1.39 by replacing a single file. First close the running linuxnet by hitting the ESC key and entering: quit (do it a second time if linxnet doesn't quit). Stop Direwolf with CTRL-C. Delete, rename, or move your existing linuxnet executable from the linuxnet folder. Replace it with this one: https://www.n1uro.com/xnet/files/linuxnet .
It most likely won't be executable, so do Step 4 above to make it executable.

19. Restart Direwolf, then restart linuxnet to verify it is now v1.39.

20. All done :)

I used these websites and some of their various links for resources:

https://www.n1uro.com/xnet/files/
https://www.n1uro.com/xnet/xsysop.html
https://www.n1uro.com/xnet/xsysop.htm
http://xnet.swiss-artg.ch/download.htm
https://packet-radio.net/direwolf-and-jnos-review/